

BASICS OF AQUACULTURE – Definition and scope

➤ Aquaculture is the farming of aquatic organisms including fish, mollusks, crustaceans and aquatic plants. Farming implies some form of intervention in the rearing process to enhance production, such as regular stocking, feeding, protection from predators, etc.. Farming also implies individual or corporate ownership of the stock being cultivated. (As per FAO)

Thus aquaculture is underwater agriculture or aquafarming. More simply Aquafarming is propagation of aquatic organisms in controlled, semi controlled or simulated conditions.

Indian Fisheries

Global position	3 rd in Fisheries 2 nd in Aquaculture
Contribution of fisheries to GDP (%)	1.07 (Rs. 34,758 crore)
Contribution to agricultural GDP (%)	5.84
Per capita fish availability (kg)	9.0
Annual export earnings (Rs. in crore)	7,200
Employment in sector (million)	14.0

Aquatic Resources

Coastline	8118 kms
Exclusive economic zone	2.02 million sq. km
Rivers and canals	1,97,024 km
Reservoirs	3.15 million ha
Ponds and tanks	2.35 million ha
Oxbow lakes and derelict waters	1.3 million ha
Brackish water	1.24 million ha
Estuaries	0.29 million ha

Fish facts

Present fish production	6.57 mt
	Marine: 2.82
	Inland: 3.75
Production potential	8.4 mt
	Marine: 3.90
	Inland: 4.5
Fish seed production	22615 million fry
Hatcheries	1,070
FFDA	429
BFDA	39

Purpose of Aquaculture

- Utilization of available natural water resources
- To increase production for per capita consumption and income
- Ornamental purpose
- Sports and game purpose.
- Upliftment of socioeconomic status of people
- Create employment opportunities.
- Utilization of byproducts like fish, liver oil, fish protein concentrate, etc.

Advantages of fin fish culture

- Poikilothermic or cold blooded animal, so need not spend energy for temperature regulation of body.
- Specific gravity of fish is about 1.02-1.06 which is nearly same with that of water, so need not spend energy for maintaining its position in water.
- Fish do not consume water.

- Higher fecundity.
- Edible tissues of fish (80.9%) is greater than chicken broiler (64.7)
- Convert food to body tissues more efficiently than any other farm animal.

Different types of Aquaculture

1. According water system

- Static culture system
- Flowing culture system
- Semi - closed recirculating system.

2. According to type of water

- coldwater fish culture
- Warm water fish culture
- Freshwater fish culture
- Mariculture
- brackish water culture

3. According to stocking combination

- Monoculture
- Polyculture (Composite)

4. According to intensity of efforts

- subsistence fish culture
- extensive fish culture
- semi intensive fish culture
- intensive fish culture
- super intensive fish culture

5. According to cultured group

- fin fish culture
- shell fish culture
- frog culture
- seaweed culture
- fresh water plant culture.

6. According to integration with other farming systems

Integrated aquafarming is a diversified and coordinated way of farming of producing of agricultural items in fish farms with as main product. The items produced are either used as source of feed and fertilizers, source of additional income or both.

AAA system (Agriculture- Aquaculture- Animal Husbandry)

7. Special culture system

- Cage culture
- Pen culture
- Sewage fed fish culture
- String culture.